UPDATE ON ANSI N43.17: RADIATION SAFETY FOR PERSONNEL SECURITY SCREENING SYSTEMS UTILIZING IONIZING RADIATION

Frank Cerra

The subject of x-ray systems used for security screening of individuals was discussed at the 1998 and 1999 meetings of TEPRSSC. Partly in response to TEPRSSC's 1998 recommendations, CDRH has formed a subcommittee of the ANSI/HPS N43 Committee (Equipment for Non-Medical Radiation Applications) for the purpose of developing a consensus standard for these systems. The subcommittee N43.17, whose members and affiliations are listed below, convened on Nov. 15-16, 1999 in Sacramento California.

Martin Annis, AnnisTech
Edgar D. Bailey, California Department of Health Services and CRCPD
Frank Cerra, FDA/CDRH (Chair)
Larry Cothran (Alternate: Terry Brayer), California Department of Corrections
Daniel Kassiday, FDA/CDRH
Roy Lindquist (Alternate: Pamela Zaresk), US Customs Service
Harri Maharaj, Health Canada, Radiation Protection Bureau
William Passetti, Florida Department of Health
Andy Kotowsky (Alternate: Timothy Scroggins), Rapiscan Security Systems
Armen Sahagian, Federal Aviation Administration
Gerald Smith, American Science and Engineering
Steve Smith, Spectrum San Diego, Inc.

The first topic on the agenda for the Sacramento meeting was the scope of the standard. In addition to the personnel security screening systems currently being used in the US, the following systems were considered: walk through systems, systems to scan moving vehicles, and systems to detect swallowed contraband. It was decided that the walk-through systems should be included in the scope because of their similarity to the present scanners. The other types of systems were excluded from the standard. Because of major differences, the excluded systems would be better handled by a separate standard. This would also significantly expedite the completion of the present standard. Since no specific guidelines for the use of personnel scanners exist at the moment, publication of this work at an early date is a priority. The conditions for use and dose limits were discussed at length at the Sacramento meeting. A general consensus was reached on some key topics, including subject dose limits, operator dose limits, radiation leakage, labeling and indicators, and informed consent. There was also a general consensus on the proper applications for this technology in society. Other topics discussed at the meeting included preventive maintenance, shielding, and safety interlocks.

A major objective of the group is to be consistent with accepted recommendations and standards from national and international organizations, as well as existing regulations dealing with public exposure to ionizing radiation. The present draft of the standard is well in agreement with the most current recommendations regarding radiation doses to the public. However, in view of the novelty of this technology, the subcommittee is especially interested in achieving the ideal balance between consistency with other standards and regulations, operational practicality, and universal acceptance. Members are presently considering proposals for improving the draft standard in this respect. In these deliberations, as in all of the discussions, the safety of individuals is the primary and utmost concern. Other topics being currently considered by members of the group are the requirements for training and qualification of operators, records, and documentation. A major effort is being devoted to the dose measurement methodology, including a detailed appendix. It is expected that the group will hold two more meetings this year. The subcommittee hopes to have a final draft ready for the N43 Main Committee by the end of the calendar year. The summer of 2002 is a realistic estimation of a publication date.